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FORCE HEALTH PROTECTION AND READINESS

Sodium Dichromate
Exposure Impacts

Knock Out the Confusion
Brain Injury Facts

Who Needs a Flu Shot?
New Vaccine Guidance

Is Xbox the Future of Physical Therapy?

FORCE HEALTH PROTECTION AND READINESS

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A Message from the Deputy Assistant Secretary of Defense for Force Health Protection and Readiness

Welcome to the 2011 issue of *Force Health Protection and Readiness*. As the DASD for FHP&R, I believe it is important to share pertinent military health-related information with our Service members, veterans, and their families. This publication showcases the hard work at FHP&R over the last few months.

A few of the new initiatives we are spotlighting in this issue include a new vaccine that should reduce the risk of respiratory illness in recruits, a partnership between the Department of Defense and U.S. Public Health Service to provide increased mental health care in military treatment facilities, and a noninvasive triage device that could be available as early as next year.

As always, our writers and staff hope you consider *Force Health Protection and Readiness* a key resource for the latest in health news and information. We welcome you to contact us at FHPR.communications@tma.osd.mil with any questions, comments, subscription requests, or story ideas.

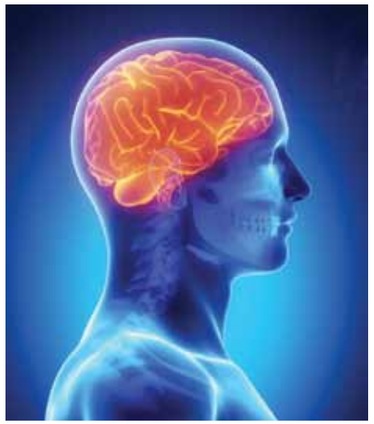
Dr. George Peach Taylor

Deputy Assistant Secretary of Defense
for Force Health Protection and Readiness

Concussion:
A Heads Up On Brain Injury

By: Lt. Cmdr. Tara A. Cozzarelli, Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

Traumatic Brain Injury (TBI) is often associated with the wars in Iraq and Afghanistan. However, although TBIs do occur in theater, they can just as easily occur off the battlefield. The Department of Defense (DoD) is committed to preventing and treating TBI in Service members on the battlefield, as well as family members at home who may experience TBI related injuries due to trips or falls, assaults, motor vehicle crashes, or sports-related injuries.



A TBI is the result of a blow or jolt to the head, or penetrating head injury, which disrupts the normal function of the brain. The severity of a TBI may range from mild (a brief change in mental status or consciousness) to severe (an extended period of unconsciousness or amnesia). The severity (mild, moderate, severe) is used to describe the injury, not necessarily the severity of symptoms.

90 percent of TBIs are considered mild TBIs, or concussions. Concussion symptoms typically improve rapidly, within hours to days. However, the rate at which an individual recovers depends on many factors. Recovery is often slower among older adults and children. Even those who have had more than one concussion in the past are expected to recover, but each time a concussion is sustained the recovery process may take longer.

With a concussion, there is sometimes a brief loss of consciousness or "blacking out", loss of memory, or a feeling of "having your bell rung." However, a loss of consciousness is not required for an injury to be considered a concussion. In fact, most concussions occur without a loss of consciousness. While concussions are usually not life-threatening, their effects can be serious. It is easy for concussion symptoms to go unnoticed for days or weeks following an injury, or be completely missed, as an individual may look okay even though he or she may act or feel differently. Early detection leading to appropriate evaluation and care is the cornerstone for successful recovery following a concussion.

Common symptoms of a concussion include: headaches that do not go away; difficulty remembering, concentrating, or making decisions; slowness in thinking, speaking, acting, or reading; getting lost or easily confused; feeling tired all of the time (having no energy or motivation); mood changes (feeling sad or angry for no reason); changes in sleep patterns (sleeping a lot more or having a hard time sleeping); light-headedness, dizziness, or loss of balance; nausea; increased sensitivity to lights, sounds, or distractions; blurred vision or eyes that tire easily; loss of smell or taste; and ringing in the ears.

The majority of people who sustain a concussion recover without the need for specialized medical treatment. Very simply, rest remains an important intervention following a concussion because it helps the brain heal and allows symptoms to improve. In addition to rest, here are some tips that may help symptoms improve following a concussion. Please note that it is critical to seek the care of a health care provider following a concussion. These tips are not intended to replace the medical advice of a health care professional.

- Avoid caffeine, stimulants, or activities that may prevent restful sleep at night
- Return to normal activities gradually, not all at once
- Avoid intense physical or mental activities until symptoms have been resolved
- Refrain from using alcohol because it may slow recovery and increase the risk of further injury

DoD recognizes that all severities of TBI, including concussions, are a serious concern and, therefore, has dedicated resources to prevent, diagnose, treat, and better understand this type of injury. For additional information about TBI or concussions, please contact the Defense and Veterans Brain Injury Center by visiting *www.dvbic.org* or calling 1-800-870-9244.

Adenovirus Vaccine:
Aimed at Reducing Respiratory Illness in Recruits

By: Matt Pueschel, FHP&R Staff Writer

The Military Health System, in partnership with the pharmaceutical industry, has developed a new vaccine to prevent severe flu-like febrile respiratory illness caused by adenovirus type 4 and type 7 - commonly transmitted person-to-person in basic training sites where recruits live in close quarters.

The vaccine, approved by the Food and Drug Administration (FDA) in March 2011, was developed by Teva Pharmaceuticals USA, Inc./Barr Laboratories, Inc., under a Department of Defense (DoD) contract managed by the U.S. Army Medical Materiel Development Activity. Due to the absence of seasonal patterns of adenovirus infections, DoD will require a year-round vaccination policy for all new recruits. "[The vaccine] makes for a smoother basic training program. These adenovirus illnesses are preventable," said John Lucas, deputy director of Force Health Protection and Readiness' Medical Countermeasures directorate and the DoD Health Affairs representative on the Integrated Product Team for the vaccine.

DoD will begin administering the vaccine to recruits during in-processing at basic training locations this fall.

Adenovirus type 4 and type 7 are prominent sources of febrile respiratory disease in U.S. military recruits, and can cause acute infections of the respiratory tract, gastrointestinal system, eyes, and central nervous system. Over the past 10 years the virus has affected more than 15,000 basic trainees annually, causing about three to four days of illness per case, and one to two deaths each year. "There are a lot of intense physical activities in basic training, such as long hikes. Viral resistance can decrease and recruits can become more vulnerable to illness," Dr. Lucas said. "It's easier to prevent illness due to adenovirus from occurring instead of waiting until someone gets ill and may have to leave training until the next [basic training] cycle begins."

In the mid '90s the DoD possessed an older adenovirus vaccine that lowered infections among recruits to nearly zero, but decided to discontinue the vaccine, and supplies ran out in the late '90s. After adenovirus illnesses started to reappear, DoD decided to acquire an updated version of the vaccine that met new FDA requirements and technology standards. The original vaccine technology was transferred, new lab facilities were built to meet current standards, and the vaccine was developed to achieve FDA approval. "The new vaccine is more advanced, has a highly controlled manufacturing technology, and the proof [of efficacy] is tighter and protects against disease," Dr. Lucas said. "It has been proven safe."

Large-scale studies of the new vaccine in U.S. military recruits showed high effectiveness in preventing adenovirus associated with type 4 febrile acute respiratory disease (99.3 percent) and inducing neutralizing antibody response to adenovirus type 7 in 94 percent of those inoculated. Officials from the Military Vaccine (MILVAX) Agency said they do not anticipate any significant adverse events to occur with the new vaccine, but any cases of possible reaction would be treated symptomatically by DoD providers. The new vaccine is not advised for pregnant women and has not been evaluated in immunocompromised individuals. Teva will monitor any uncommon medical events that occur in the first 100,000 military recruits who receive the vaccine.

DoD also has made strides to enhance preventive health measures that reduce virus prevalence at basic training sites, such as hand sanitizing, the use of surgical masks, rearranging group living spaces, placing beds so that recruits sleep head to toe, and improving ventilation and cleanliness.

DoD Partners to Provide Mental Health Care

By: Matt Pueschel, FHP&R Staff Writer

In a testament to the value of interagency partnering, Department of Defense (DoD) and U.S. Public Health Service (PHS) mental health care providers are working side by side to treat patients in military treatment facilities (MTFs) across the country.

Since April 2008 nearly 160 PHS mental health clinicians have been assigned to DoD facilities throughout the U.S. to help meet the mental health needs of Service members and their families and lessen the strain on MTFs due to elevated wartime deployments of military mental health providers. Up to 215 can be assigned through the interagency agreement.

"They wear the PHS uniform but provide care right beside DoD providers. It's immediately relevant to our boots on the ground folks who have them or asked for them," said Lt. Col. Hans V. Ritschard, USAF, who served as director of the Psychological Health Strategic Operations directorate in Force Health Protection and Readiness (FHP&R) overseeing the agreement.

The agreement resulted from a report of the DoD Task Force on Mental Health in June 2007 that was provided to Congress and recommended ensuring MTF staffing levels are sufficient enough to provide Service members and their families with timely mental health services. DoD's response to the report was to rapidly increase its number of providers by entering into the agreement with the PHS to supplement military staff at MTFs.

The 2008 DoD/PHS agreement is funded by DoD through funds provided by Congress to support psychological health and Traumatic Brain Injury (TBI) programs in the military. No costs are incurred by the MTFs or the military Services. The initial agreement is for 10 years, and its terms will be reviewed every four years.

In carrying out the program, each military Service prepares requests for mental health providers required to meet the needs at particular MTFs. FHP&R reviews the requests, and the PHS recruits officers through its Commissioned Corps ranks and direct civilian accessions. Through late September 2011, 155 PHS mental health officers had been assigned to 46 MTFs throughout the U.S. (and one outside the country) with another 34 matched with assignments and awaiting processing. Those already detailed include psychologists, psychiatrists, social workers, and psychiatric nurse practitioners.

The PHS officers also perform collateral duties such as serving on psychiatric rapid intervention teams, delivering briefings on stress management, advancing community partnerships, and conducting drug and alcohol abuse evaluations. "[But] they are all clinical positions and it is a requirement that they work at least half the time in clinical care," Lt. Col. Ritschard advised.

FHP&R provides policy oversight of the agreement, advising DoD's Health Affairs leadership on its delivery and content. "The whole purpose was to increase access to care in MTFs, so the PHS providers see patients and some fill the needs of clinics in terms of membership on committees and leadership positions," said Cmdr. Nicole L. Frazer, USPHS, senior policy analyst for FHP&R. "Focus groups say the installations where officers are assigned love it. The officers are flexible, adaptable, have respect for the uniform, are providing good care, and have received positive feedback."

The assigned officers have an average of more than 11 years of clinical experience. Nearly half also have previous military experience. "For those clinicians who were getting out [of the military], this is a way to retain their skill set in the DoD," said Cmdr. Frazer, a former Air Force Officer who later joined the PHS and now works at the DoD under a separate interagency agreement.

The new positions provide stability in areas that the military often had to hire temporary contractors. The agreement for each PHS officer runs for three years, but can be extended with concurrence by the provider and the MTF's leadership.

"Back in 2007 when Congress first gave DoD money to care for wounded warriors, a big priority was access to care," said Dr. Mark L. Paris, a former consultant for FHP&R. "There was a tremendous need to get mental health providers to work in MTFs, especially with military providers leaving on deployments. "

Cmdr. Frazer said Air Force psychologists were only about 70 percent manned when the agreement with PHS began. Some locations had no psychologists present. The Army also was significantly undermanned in the area of mental health, so it has been aggressive in utilizing the agreement with the PHS. The majority of the PHS placements have been to the Army, although placements encompass all military departments.

The June 2007 report of the DoD Task Force on Mental Health, titled "An Achievable Vision," emphasized wartime demands, high operational tempo, increased deployment of mental health providers, and the emergence of post-traumatic stress disorder (PTSD) and TBI from conflicts overseas had exposed shortfalls in the health care system. The report called for the implementation of sufficient resources to ensure an adequate supply of mental health providers who are easily accessible; building a culture of support for psychological health that dispels the stigma of seeking care; and making mental health assessments effective, efficient, and a normal part of military life.

Program benefits for participating PHS officers include filling a pressing health care need; excellent work/life balance; gratification that comes with serving a military population; leadership opportunities; and applying their uniform experience to the MTFs. "They already understand the pride in wearing the uniform and understand the responsibility of filling a Presidential commission," Lt. Col. Ritschard said. "PHS also has a history of leading in areas of public health. Many things that have to do with the public health model relate to mental health and the broader community model of prevention and outreach."

The Commissioned Corps of the PHS is one of the seven official Uniformed Services of the U.S. "We offer that flexibility and stability and the fact the PHS providers maintain continuity of care with the military officers deploying so frequently and moving often has been excellent," said Cmdr. Frazer.

The PHS offers a two-week training to officers that contains a component on military customs and interagency missions, and was designed collaboratively by military medical educators, PHS Commissioned Corps officers, and training experts. In the Call-to-Active Duty Officer Basic Course, participants acquire competencies on the values of leadership, service, and public health while also gaining firsthand knowledge and basic experiences in readiness and response.

Additionally, the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury offers training at the Center for Deployment Psychology for mental health care providers assigned to military installations on the unique mental health concerns that may arise from combat experience and evidence-based treatment for PTSD and TBI. The training addresses the psychological reactions of Service members and their families throughout the deployment cycle, and the deployment experiences of mental health providers themselves. "The Services send people to those programs in evidence-based treatments for PTSD and military culture and everything a provider of military health care could benefit from," Dr. Paris advised.

Cmdr. Frazer, who also chairs a PHS-DoD psychology advocacy group, said FHP&R is available to help the "pioneers of this historic agreement and relationship, and make sure the officers have what they need."

Such interagency collaboration allows U.S. agencies to do their jobs collectively in a tight budget era. "It's the best kept secret," said Cmdr. Frazer. "It's a great opportunity."

For more information about the DoD-PHS mental health provider program, please contact Cmdr. Frazer at nicole.frazer@tma.osd.mil.

Qarmat Ali Medical Surveillance Program

Monitors Sodium Dichromate Health Effects

By: Kelly Kotch, FHP&R Staff Writer

Qarmat Ali is an industrial water treatment and pumping plant in Iraq that supports the oil industry. In 2003, KBR, previously known as Kellogg Brown & Root, began restoring the Qarmat Ali plant to operational status. Members of the National Guard from Indiana, South Carolina, West Virginia, and Oregon were on site for short periods to protect the KBR team and U.S. Army Corps of Engineers (USACE) personnel.

While working at the Qarmat Ali plant, KBR discovered sodium dichromate, a chemical compound known to cause cancer, had been spread around the site by looters. KBR implemented a series of actions to reduce or eliminate potential exposures to sodium dichromate. After KBR notified USACE of the findings, the Army sent a special team from the United States Army Public Health Command (USAPHC) to examine individuals who had been working at the site, and to determine whether the sodium dichromate was a health risk.

The USAPHC team performed extensive environmental samplings and administered comprehensive physical examinations to Service members who were on site. The results indicated sodium dichromate exposures were brief and unlikely to cause any increased risk for long-term health effects. The Defense Health Board, a well respected independent advisory group of outside medical and scientific experts, agreed with the findings. Recently, some KBR personnel, veterans, and Service members voiced concerns about their exposures. Congressional testimony by some individuals suggested that sodium dichromate exposure levels may have been greater prior to the time of the environmental testing and health assessments. The uncertainty over the earlier exposure levels led the Department of Veterans Affairs (VA) and DoD to initiate the Qarmat Ali Special Medical Surveillance Program.

Former soldiers give testimony regarding their exposure to sodium dichromate during their service at Qarmat Ali, Iraq before the U.S. Senate in Washington, D.C., August 3, 2009. (U.S. Army photo by Staff Sgt. Jim Greenhill/Released)

This surveillance program is designed to monitor the health of up to 900 DoD personnel who spent time at the Qarmat Ali site prior to October 1, 2003. VA is examining veterans, retirees, and members of the Guard and Reserve who were at Qarmat Ali, and DoD is performing examinations on participating active duty military, as well as current and former DoD civilian personnel. Examinations in DoD military treatment facilities (MTFs) began in early June 2011 with baseline examinations performed at four U.S. Army Medical Centers – Tripler, Walter Reed, Brooke, and Madigan. If necessary, exams will occur at other select military MTFs.

What is sodium dichromate?

Sodium dichromate is a chemical compound that looks like a red-orange salt. It is commonly used in the manufacturing of chemicals, and to prevent corrosion of industrial equipment, including oil wells. Sodium dichromate contains hexavalent chromium, a known carcinogen that can lead to lung cancer after prolonged exposure.

Why has a surveillance program been established?

During September and October 2003, the U.S. Army investigated possible health risks resulting from the presence of sodium dichromate at the Qarmat Ali plant. The investigation included measurements of chromium levels in the air, and the accomplishment of blood tests and physical examinations on personnel. Based on their findings, the Army investigators determined that the sodium dichromate would result in only brief, low-level exposures. They concluded that this would be unlikely to cause any long-term health effects. Short-term (temporary) health effects from sodium dichromate were not identified. Congressional testimony by some individuals present at Qarmat Ali suggested that earlier exposures, before the arrival of the Army team, may have been higher than estimated. The health and well-being of DoD personnel is our highest priority, so DoD and VA joined together to begin monitoring individuals for evidence of long-term health effects over the next several decades.

What are the goals of the program?

The program will monitor veterans, Service members, and DoD civilian personnel, both current and former, who may have been exposed to low levels of sodium dichromate, over time for possible adverse health effects. The goal of the program is to ensure that if any illnesses develop, they are identified early, and the affected individuals are referred to appropriate treatment before the conditions become more serious.

If I was at Qarmat Ali, should I be worried?

Based on the Army's risk assessment and medical examination results, DoD and VA consider it unlikely that any current or long-term health effects will result from being present at the Qarmat Ali site. This special surveillance program was established as a precaution.

Who can participate in the program?

All veterans, Service members, and current or former DoD civilian personnel who served at the Qarmat Ali Water Treatment Plant prior to October 1, 2003, are encouraged to participate in the special medical surveillance program. These individuals should have received a letter signed by Secretaries Gates and Shinseki inviting their participation into the program, and directing them to contact either the DoD or VA, depending on their status. Anyone possibly exposed who has not been reached should contact the Wounded Soldier and Family Hotline at 1-800-984-8523 or wsfsupport@conus.army.mil. Anyone who is now a veteran should contact the VA by visiting *http://www.publichealth.va.gov/exposures/oefoif/qarmat-ali.*

Sodium dichromate is a chemical compound commonly used in the manufacturing of chemicals, and to prevent corrosion of industrial equipment.

What is included in the surveillance examination?

The initial examination at DoD MTFs will focus on the areas of the body most likely affected by exposure to sodium dichromate dust: the ears, nose, throat, respiratory system, and skin. The evaluation will include a medical history, such as respiratory symptoms or known respiratory disease, and a chest x-ray. Based on the findings, the examiner may recommend a special type of pulmonary function test measuring lung capacity and the ability to breathe with and without the aid of a medication. Evaluations in later years will be limited to a follow-up chest x-ray every five years.

What if an abnormality is found during the examination?

If abnormalities are found during a surveillance examination, individuals will be directed to their primary care provider to initiate appropriate referral for evaluation and treatment of the condition. For individuals who normally receive their medical care in MTFs or through TRICARE, they will be referred to their regular primary care provider within the Military Health System.

For individuals who normally receive care through a private insurance network, they will be directed to seek further care through that resource. Disease resulting from federal civilian employment (related to Qarmat Ali or not), and causing disability or requiring medical care, is covered by the U.S. Department of Labor's Office of Workers' Compensation Programs. Those individuals may initiate a claim through their personnel office.

How much does it cost to participate in this program?

The program is free to all eligible participants. Individuals must follow the procedures for scheduling examinations as directed in the notification letters for the medical surveillance program. DoD exams for active duty, and current and former civilians, will be conducted in military MTFs, except for a small number of active duty personnel who may be referred to VA facilities.

How long will the special medical surveillance last?

The Qarmat Ali Special Medical Surveillance Program will last indefinitely as long as individuals wish to participate. Every five years after the initial baseline examination, a follow-up chest x-ray will be repeated.

DoD Enhancing Training for Global Medical Missions

By: Matt Pueschel, FHP&R Staff Writer

The Department of Defense (DoD) is aiming to improve its overall preparedness for international health missions through an ongoing effort to develop standardized training requirements in global Medical Stability Operations (MSO) for all Military Health System (MHS) personnel.

"The MHS will begin training its medical personnel to general competency in MSO, offering [training] to both enlisted [personnel] and officers, and eventually offer more specialized training," advised Dr. Warner Anderson, director of the Office of Force Health Protection and Readiness' (FHP&R's) International Health Division.

MSOs encompass all phases of DoD medical engagements overseas that contribute to global stability, such as building partnerships with civilian agencies and international health leaders, assisting host country militaries in developing their health care capacities, and providing medical relief and health sector reconstruction in conflict, disaster, or at-risk settings. DoD's profile across these efforts has increased in recent years, with medical personnel deploying to assist with disaster relief missions in Indonesia and Latin America, and working with Iraqi, Afghan, and African forces to build their health capabilities.

DoD policies now identify MSO as a core U.S. military mission with a priority comparable to combat operations. The DoD is integrating MSO into MHS training so military medical personnel

(DoD photo/Released)

are well prepared to support stability operations in coordination with other U.S. government departments, international leaders, militaries and organizations, and restore essential health services when local or civilian aid providers are unable.

"We need to be able to respond quickly and proficiently throughout the world and ensure we are working closely with our host country and civilian partners so that we understand the local health infrastructure requirements in the nation we are operating in and support capacity building efforts that leave positive, sustainable solutions behind," Dr. Anderson advised.

Recently, FHP&R led an effort to identify gaps in MSO capabilities across the MHS. Results pointed to a lack of training programs to optimally prepare individuals to carry out these missions utilizing pre-assessments and planning to determine host countries' capabilities and needs so that culturally appropriate and sustainable solutions are developed together with civilian and global partners. An MSO working group, co-chaired by FHP&R and including Service representatives, was launched to develop a set of DoD requirements and resource solutions to address these identified gaps. The working group's Education and Training Committee has since proposed a comprehensive strategy to provide MHS personnel with the knowledge and skills needed in stability operations.

The strategy would establish four categories of MSO training: a basic course for all MHS personnel; an advanced pre-deployment course focused on cultural and health system issues specific to the region the medic is deploying to; an in-depth graduate level global health track; and a course oriented to senior medical and non-medical leaders outlining how MSO strategies fit into DoD overseas efforts. A training consortium would be established to develop these competencies. "The first category was recommended to be a familiarization and awareness level training for all personnel," advised Dr. Charles Beadling, a member of the Education and Training Committee, and director of the Center for Disaster and Humanitarian Assistance Medicine (CDHAM) at the Uniformed Services University. "It [will] contain elements such as basic terminology, major participants, and why stability operations are a major component of our national security. The second category will consist of a variety of focused courses that can provide 'just in time' pre-deployment training. The third category is creating a group of subject matter experts to serve as consultants to commanders on MSO issues as they relate to theater security cooperation plans (for each regional DoD command)."

There are many existing MSO-related courses offered by DoD and civilian agencies the Services could use to help meet the proposed requirements in the strategy.

Existing DoD courses include the Medical Stability Operations Course (MSOC) taught through the Defense Medical Readiness Training Institute (DMRTI) and IHD; the Military Medical Humanitarian Operations Course at CDHAM; Humanitarian Assistance Response Training (HART) and Health Emergencies in Large Populations (HELP) courses offered through the Center of Excellence for Disaster Medicine and Humanitarian Assistance (COE) in Hawaii; and others.

The MSOC, which lasts three to four days, provides students with materials about in-country U.S. Agency for International Development teams, international organizations and regulations, and working with non-governmental organizations (NGOs). While it serves as a general introductory first category course, other available courses such as HART and HELP delve deeper into the tactical details of humanitarian operations and potentially could serve to meet the more advanced category requirements. "As the requirements are refined, the Services can choose to have the MSOC meet their need or they may have another mechanism to meet that requirement," said Col. Fike, FHP&R's liasion to the Air Force's International Health Specialist Program.

The HELP course, for example, hosted by COE in collaboration with the International Committee of the Red Cross, is an intensive three-week course

(DoD photo/Released)

that educates DoD participants on major public health issues that occur in populations affected by disasters, complex emergencies, and internal displacement. "It educates military personnel on the essential international frameworks, tools, operational standards, and activities for supporting a disaster-affected population, and to ensure their long-term recovery," said Craig Jacques of COE. "DoD personnel leave the course with a greater understanding of the international community they will be responding beside, and working with, in a disaster."

DoD policies now identify Medical Stability Operations as a core U.S. military mission with a priority comparable to combat operations.

While DoD offers expertise in security, trauma care, research and technology, preventive medicine and medical logistics, NGOs often provide localized health care, needs assessment, and cultural expertise developed through long-term commitments around the world.

Col. Fike said the main issue is that current courses in MSO are optional and resource-dependent. The number of individuals who attend is relatively low due to cost and time away from duty. With some 120,000 medics in the military, there are many who would benefit from MSO training. "The gap is not so much lack of a particular course [as lack of] a defined requirement," he advised. "People go to courses now [voluntarily] because it is a recognized need."

DoD resources will need to accompany the approval of the MSO training strategy. "The basic plan should be accomplished later this calendar year, but the Services may take another year to develop courses of action to meet the new requirements," Col. Fike advised.

Dr. Beadling said more MSO training programs will be developed and made available. Dr. Anderson said he considers the training to be an important DoD investment that reflects health's unique ability to be a beneficial, neutral player to build international partnerships, mitigate regional crises, and prevent costly conflicts.

Instruction for Defense Lab Network Signed:

Overseas Labs Vital to Military Readiness

By: Richard Searles, FHP&R Staff Writer

The Department of Defense (DoD) is one step closer to making the new DoD Laboratory Network a reality with the official signing of the DoD Instruction (DoDI) 6440.03, "Department of Defense Laboratory Network (DLN)".

The DoDI was officially signed on June 10, 2011, by the Under Secretary of Defense for Personnel and Readiness, Under Secretary of Defense for Acquisition, Technology and Logistics, and the Under Secretary of Defense for Policy.

The DoDI calls for the creation of a network of DoD chemical, biological, radiological, and nuclear (CBRN) laboratories, programs, activities, and/or related response capabilities. The DoDI establishes policy, assigns responsibilities, and provides instructions which allow the network to coordinate execution, develop consensus, and make recommendations.

Additionally, the instruction calls for a network to coordinate existing programs for the assessment of, and response to, the use of weapons of mass destruction. Furthermore, the DLN is intended "to provide timely, high-qualified, actionable results for early detection, confirmation, response, and effective consequence management of acts of terrorism or warfare involving CBRN agents; infectious disease outbreaks; and other all-hazards agent events requiring a DoD integrated incident response."

FHP&R worked with the Office of the Assistant Secretary of Defense (Nuclear, Chemical, and Biological Defense Programs) and the Office of the Assistant Secretary of Defense (Homeland Defense and Americas' Security Affairs) on the creation of the new network.

Included in the DLN are laboratories throughout the continental U.S. as well as the DoD's overseas laboratories.

Dr. Jonathan Woodson, assistant secretary of defense for health affairs, spoke at a forum earlier this year championing the overseas DoD medical research laboratories and their vital significance to U.S. military readiness, global health initiatives, and building partnerships at home and abroad.

Dr. Woodson also spoke at the Center for Strategic and International Studies (CSIS) Forum in June where its Global Health Policy Center released a new report, "The Defense Department's Enduring Contributions to Global Health -- The Future of the U.S. Army and Navy Overseas Medical Research Laboratories."

The DoD's overseas medical research laboratories will continue to play a key role in ensuring the readiness of deployed U.S. military forces well into the future, said Dr. Woodson. He also said that the labs are a major contribution to global health and U.S. partnership-building around the world.

For the past 60 years, the U.S. Army and Navy have relied on DoD overseas medical research laboratories to protect U.S. deployed forces from indigenous infectious diseases, such as malaria, dengue, and Japanese B encephalitis.

The overseas labs currently include the U.S. Army Medical Research Unit in Nairobi, Kenya; the Armed Forces Research Institute of Medical Sciences in Bangkok; the U.S. Naval Medical Research Unit (NAMRU)-3 in Cairo, Egypt; NAMRU-6 in Lima, Peru; and NAMRU-2 Pacific, temporarily headquartered at Pearl Harbor, Hawaii. A sixth laboratory, U.S. Army Medical Research Unit Europe, in Heidelberg, Germany, conducts psycho-social research. In March 2011, the precursor to a new U.S. Army laboratory, the Central Public Health Reference Library, opened in Tbilisi, Georgia.

Woodson echoed the CSIS report's finding that the laboratories, while "exceptional" in their contribution to military readiness as well as scientific research and global health, are "surprisingly under-recognized and undervalued" outside the research community.

The CSIS report noted lab contributions including: the first vaccine for Japanese B encephalitis virus; the first isolation of the Rift Valley Fever virus; the first identification of new strains of dengue fever in Peru; the demonstrated efficacy of several drugs to treat and prevent malaria; and, the first successful HIV/AIDS vaccine trial in Thailand.

Woodson cited the research laboratories' long history of addressing disease that rendered Service members ineffective, with decades of work that helped develop a robust inventory of vaccines and therapeutics.

These and other efforts have helped elevate the state of military medicine to its highest levels ever "We have the lowest rate of disease and nonbattle injury ever witnessed in the history of warfare," Woodson said. "That success started in our research laboratories."

"We have the lowest rate of disease and nonbattle injury ever witnessed in the history of warfare. That success started in our research laboratories."

The laboratories' achievements have extended far beyond the military, helping to reduce human suffering and promoting stability around the world, Woodson said.

"Building healthy populations is a worthy strategic engagement approach," he said. "In fact, utilizing medicine and building healthy populations is a way of preserving the peace so we don't have to get into these kinetic wars" and can focus on building stable societies.

Woodson emphasized the importance of partnerships in advances and called for closer collaboration in the future between government agencies, academia, the private sector, and the world health community.

As noted in the CSIS report, the overseas laboratories have roots dating back to the 19th century. The Walter Reed Army Institute of Research, which oversees the Army's international network of laboratories, traces its institutional heritage to the Army Medical School, founded in 1893 by U.S. Army Surgeon General Brig. Gen. George Miller Sternberg. In 1898, Sternberg also established the Army's first two overseas laboratories in Cuba and the Philippines to investigate outbreaks of typhoid fever and yellow fever, which were undermining U.S. military efforts during the Spanish-American War.

The Naval Medical Research Center oversees the U.S. Navy's laboratories. The first domestic Naval Medical Laboratory was built on the grounds of the Brooklyn Naval Hospital in 1983.

The U.S. Army and U.S. Navy laboratories bring broad global health benefits beyond their immediate mission of force health protection. The labs focus on developing prophylactic and therapeutic drugs, and vaccines, as well as scientific knowledge, and the ability to conduct Phase III clinical trials in indigenous areas. These medical advances not only save the lives of men and women in uniform, but also have dramatic health benefits for all populations vulnerable to diseases. In many important instances, the DoD laboratories' findings have helped mitigate or eradicate disease on a global scale, as well as identify or diagnose previously unknown pathogens.

The Army and Navy overseas laboratories maintain a strong capacity for disease detection, functioning as sentinel outposts to detect emerging or re-emerging diseases that could threaten deployed troops or other vulnerable populations.

With the creation of the DLN, the system of laboratories, programs, and activities will ensure a clear delineation of current and needed capabilities; improve data collection, interrogation, interpretation, fusion, and networking; harmonize, validate, and enhance quality assurance and/or quality control of laboratory protocols and methods; standardize reporting of results; and provide a unified DoD position on external issues.

DoD Leverages Industry's New Platform:
Noninvasive, Body-Worn Device Could Improve Triage

By: Laura Curtin, FHP&R Staff Writer

Medics on the battlefield could soon carry a robust tool to enhance and guide the real-time therapies they provide to the injured. The military is investigating a medical platform technology that may do just that – and more. Combining industry innovations could evolve aspects of modern triage medicine.

Three companies are collaborating for a Department of Defense (DoD) research grant to converge their technologies into a single, noninvasive, body-worn device that provides instantaneous cardiopulmonary and metabolic status for triage and resuscitation feedback.

No device has previously existed that could transform triage into a continuous process, where casualties move from one category of injury severity to another in response to various forms of therapy. Once available, the device could offer continuous, noninvasive measurement of vital signs, movement, feedback related to uncontrollable bleeding (severe hemorrhage), along with the ability to monitor a patient's response – all in one small and lightweight device. It will be something a medic can easily carry that weighs a few ounces, but will have more capabilities than conventional portable monitors, that can weigh upwards of 25 pounds.

Resuscitation Therapy

Every minute matters in trauma care because there is no one-size-fits-all remedy.

"Resuscitation is a therapy that can be imprecise, since blood pressure cannot yet be monitored continuously in the field. Bringing back heart and lung function involves ventilation and closed chest cardiac massage. Administering intravenous fluids rapidly, and providing blood are other therapies that are applied to bring back the seriously injured from collapse to stability," Dr. Matthew Banet said, who is a co-principal investigator on the project.

The light travels through skin, fat, and muscle to determine how the muscles are using oxygen and what level of acidosis exists in deep tissue.

Dr. Banet serves as the chief scientific officer of Sotera Wireless, Inc. His company created the platform that enables body worn, continuous measurements of vital signs and patient motion. The company focuses on creating mobile and comfortable medical products.

Measuring vital signs – blood pressure, blood oxygen level, respiration rate, heart rate, and temperature – is one goal for the proposed military-grade device. Currently, blood pressure is monitored continuously only at hospitals by an in-dwelling arterial catheter. The measure is not mobile or even remotely comfortable for patients, is impractical on the battlefield, and can cause infections. The only other existing method to monitor blood pressure is with a cuff – which can only be administered every 15 minutes.

Blood pressure is a good indicator for many medical conditions, but not for hemorrhage - a deadly problem on the battlefield. To address hemorrhage, measuring additional properties beyond vital signs, such as cardiac output, could improve a medic's ability to save the seriously wounded. Another purpose of the future device is to improve health outcomes when non-compressible bleeding occurs. While tourniquets do make a difference in addressing extremity injuries on the battlefield, tourniquets do not work on the torso. Thus, the need remains for improved pre-hospital products developed through research.

Advanced Features of a Small, Noninvasive, Wearable Device

The integrated, state-of-the-art device under development has several rounds of Food and Drug Administration (FDA) approval remaining. The optimal product will evolve over 18 months, and could be available as early as the end of 2012.

Preventive measures provided by the device include: detecting hemorrhage before a standard vital sign is available; detecting the need for fluids and blood; detecting the patient's status to prevent shock; and immediate feedback on the success or failure of efforts to resuscitate a patient.

The device is planned to continuously monitor vital signs while transporting the wounded; recognize internal bleeding early; indicate when blood products are required; provide guidance on shock severity; and even generate important bedside data while the patient is at the hospital. The device is designed to follow the patient from point of injury to the medical treatment facility, and perhaps even to recovery at the patient's home.

The device also will include voice over internet protocol (VoIP) capability, a barcode scanner, a nurse call button, on-board memory, and wireless connectivity to medical record systems for providing a continuous patient record. As described above, one sensor under development will measure *cardiac output*, which is the volume of blood that the heart pumps over a given period of time. Another property is *stroke volume*, which is the amount of blood the heart injects with each heart beat. The device will include a proprietary optical sensor technology developed by co-principal investigator, Dr. Babs Soller, chief scientific officer of Reflectance Medical, Inc. The optical sensor eliminates the use of needles and sticks to the arm. It indicates an ongoing status that can dictate to medics whether blood products are needed beyond the use of saline.

Dr. Soller explains that through a unique application of near infrared light, the sensor can detect hemoglobin concentration, oxygenation, and acidity levels in tissues. The light travels through skin, fat, and muscle to determine how the muscles are using oxygen and what level of acidosis exists in deep tissue. Dr. Soller calls it the "happy tissue monitor" because tissues are in good shape when there is sufficient oxygen and acidosis is minimized. Through continuous monitoring of these parameters in real-time, medics will receive accurate and instant feedback on the effectiveness of their treatment. By using a wireless interface to communicate with the main body-worn platform, all measurements are displayed on one screen.

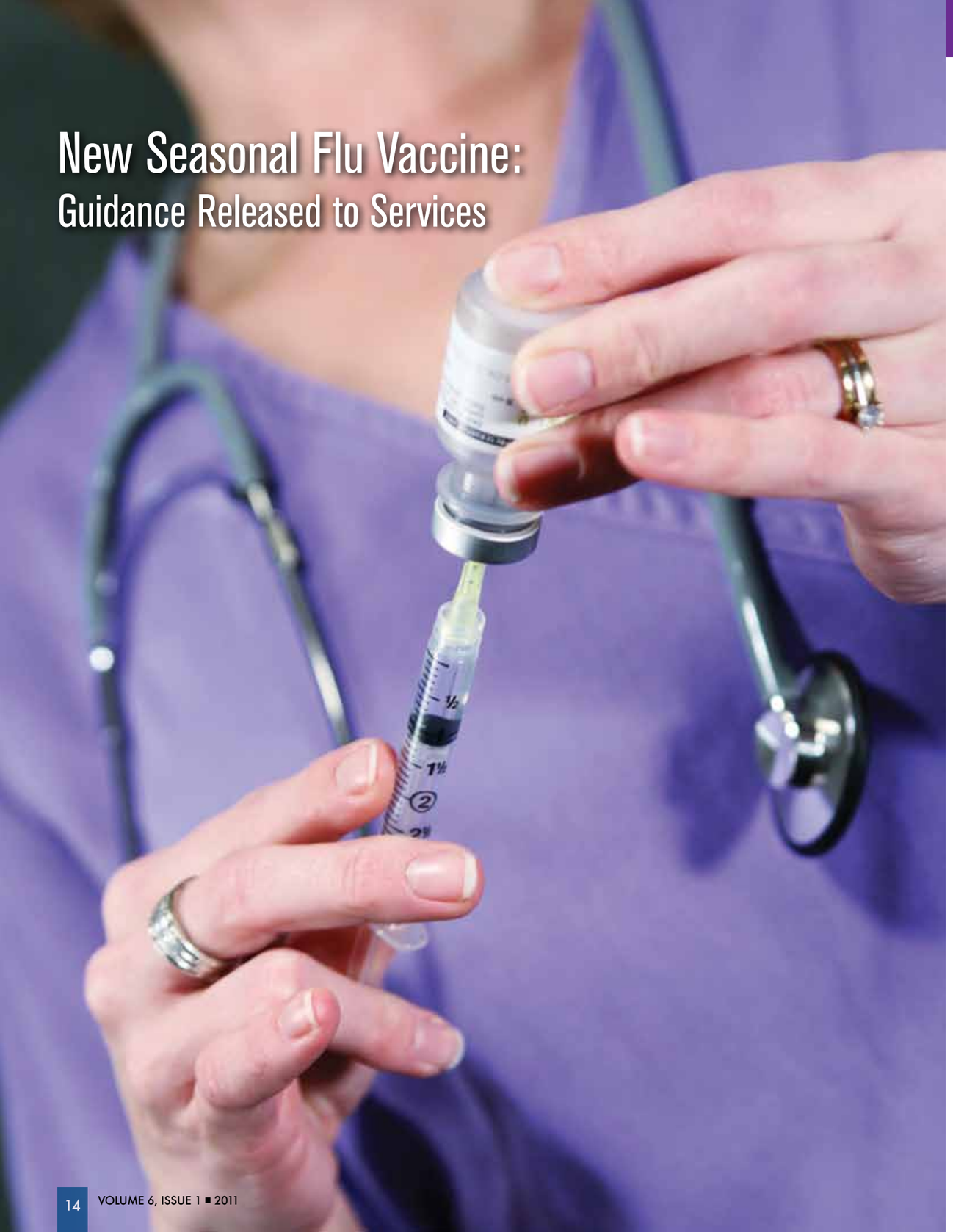
U.S. Air Force flight surgeons and pararescuemen prepare an injured contractor for transport from a coalition hospital in Herat, Afghanistan, Aug. 17, 2010. (U.S. Air Force photo by Master Sgt. Samuel Ameen/Released)

The ability to provide early warning of a patient who is heading toward shock and may need a life-saving intervention is especially notable, and will be accomplished through software developed by Flashback Technologies, LLC, that analyzes waveforms generated during measurements. The software is loaded on the same hardware device to produce an algorithm that predicts a patient's level of cardiac reserve. It runs from a wrist worn transceiver.

"For me, this is gratifying. The military rides on the back of [private industry] innovations – we're just adding new things to the platform as requested," Dr. Banet said.

Outcomes of the research collaboration among leading industry companies could not only offer better solutions for military medics, but also provide better medical evaluation, motion-tolerant measurements, and greater comfort for patients. Outside of a military setting, the device would work well for any patient at risk for shock, heart conditions, and/or internal bleeding. Other applications for future use include home monitoring of heart patients' drug therapy and assist devices; capability to aid chemotherapy patients in preventing anemia; earlier treatment of ambulatory patients; operating room monitoring; and sports applications, such as tracking an athlete's endurance training and lactate thresholds.

"The device is easy to use, noninvasive, allows sooner treatment to occur for the patient, and is portable. It's exciting to provide ways to give feedback to providers, and in turn, give patients better care," Dr. Soller said.



New Seasonal Flu Vaccine:
Guidance Released to Services

By: Matt Pueschel, FHP&R Staff Writer

The Department of Defense (DoD) recently released new guidance for the use of the flu vaccine, and military Services have begun implementing their immunization programs for the 2011-2012 influenza season.

Assistant Secretary of Defense for Health Affairs, Dr. Jonathan Woodson, has set a goal to have more than 90 percent of military Service members immunized by December 2011. DoD's new seasonal flu vaccine policy, which was released Aug. 2, can be found at *http://www.vaccines.mil/documents/1456HA%20Guidance%20for%202011-2012%20Influenza%20Season.pdf*. It requires the immunization of all Active Duty and Reserve personnel against influenza in accordance with Service-specific guidelines.

The Services have requested more than 4 million doses of the flu vaccine for the current flu season. military treatment facilities (MTFs) should expect multiple deliveries over several months. According to the Centers for Disease Control and Prevention (CDC), influenza activity usually lasts from October to May in the United States.

"The Assistant Secretary of Defense (Health Affairs) guidance for using the 2011-2012 seasonal influenza vaccine is similar to past years," said officials from DoD's Office of Force Health Protection and Readiness. However, [unlike last year] most Service members may now be immunized with either the trivalent inactivated vaccine (TIV) or the live attenuated influenza vaccine (LAIV) following caveats in the guidance.

According to the guidance, TIV and LAIV vaccines have shown to be effective in children and adults, and are newly available to the DoD this flu season. "LAIV is approved for use in healthy people two through 49 years of age who are not pregnant," the guidance states. "LAIV is [more effective and] highly recommended for healthy beneficiaries below 18 years of age."

This is the second year of expanded recommendations from the CDC for annual influenza vaccinations to include all people aged six months and older. "Seasonal vaccine effectiveness estimates continue to show good efficacy in years when there is a good match between circulating influenza viruses and vaccine strains," DoD's new guidance states.

DoD and the Services began immunization campaigns to vaccinate all eligible beneficiaries who require or request seasonal influenza immunization, including basic trainees, eligible family members, retirees, and all military and civilian health care personnel who provide direct patient care in MTFs. "Unless significant local shortages exist, eligible beneficiaries will not be denied vaccine upon request," the guidance states. "Protecting our beneficiaries is a policy of the Military Health System."

The Military Vaccine (MILVAX) Agency launched a new Immunization Awareness Month website, *http://www.vaccines.mil/default.aspx?cnt=IAM/ImmunizationAwarenessMonth*, which provides educational resources for the entire DoD family and is designed to assist organizations in coordinating promotional immunization efforts at local MTFs. It further helps educate consumers and health care workers about childhood, adolescent, and adult immunizations.

"August 2011 marked the 5th annual DoD participation in CDC's National Immunization Awareness Month (NIAM) campaign," FHP&R officials added. "The goal of NIAM is to increase awareness about immunizations that are recommended for the entire lifespan of an individual. DoD's aim is to provide comprehensive immunization health care in an effort to prevent illness in military beneficiaries, retirees, and employees, educating them on all immunizations they may need throughout their life."

If any unanticipated shortage of the influenza vaccine occurs, DoD's Health Affairs office will provide further direction regarding priority immunization tiers that are consistent with CDC recommendations.

Based on their abilities to vaccinate, military units should use initially available flu vaccine supplies to immunize key groups such as deploying personnel, those that support critical missions or continuity of operations, and high risk beneficiaries to preserve operational effectiveness and protect the most vulnerable populations.

DoD will conduct global health surveillance of influenza-like illness in both active duty and civilian populations through its regional medical laboratories and centers. Each of the military Services will monitor influenza immunization performance through their Service-specific electronic tracking systems, which must ensure that seasonal influenza immunizations have been reported to the Defense Eligibility Enrollment Reporting System.

The Services are directed in the new DoD guidance to use this season's influenza immunization program as an opportunity to test their installation-based pandemic influenza immunization plans. "We applaud the many efforts of the Services and the Combatant Commands in pandemic influenza preparedness," Dr. Woodson noted in the Aug. 2 guidance.

For more information on DoD's influenza vaccine policies and health surveillance reports, please visit *www.dod.mil/pandemicflu* and *www.afhsc.army.mil/fluReports*. Additionally, CDC seasonal influenza information can be found at *www.cdc.gov/flu*.

Researchers Apply Gaming Technology in Medical Simulation

By: Laura Curtin, FHP&R Staff Writer

How effective is gaming technology at offering medical education or health benefits in a person's own living room? The possibility exists and the Telemedicine and Advanced Technology Research Center (TATRC) is investigating a variety of unexpected technology applications. TATRC's Armed Forces Simulation Institute for Medicine (AFSIM) is determining if learning, therapy, and social environments can be effective virtually and through simulation – compared to other conventional training and treatment methods.

"We want to know how people learn. By improving methods for training, we can and will make education an everyday exercise," Dr. Thomas Talbot said.

Dr. Talbot is the chief research scientist for AFSIM and serves as a medical modeling, simulation, and training portfolio lead for TATRC. He manages research projects that look at new ways to use the latest technologies, some of which include Force Health Protection and Readiness' Defense Medical Research and Development Program (DMRDP) funded efforts. DMRDP research projects in the medical simulation portfolio are currently exploring new approaches for medical training and clinical rehabilitation.

New Technology Applications

According to the Centers for Disease Control and Prevention, medical mistakes cause 40,000 to 200,000 deaths per year in the United States. Simulation-based research could improve patient safety and clinical effectiveness by offering engaging and efficient training that minimizes risk of mistakes while medical personnel hone skills. It's also vital to maintain clinical skills for thousands of military surgeons, anesthesiologists, and interventionists who are preparing to perform specialized procedures during or after deployment.

"What we're trying to do is take how we train our doctors and nurses and make it an approach grounded in science," Dr. Talbot said. "Through science we'll be able to know when and what training is needed. We'll know that our people are up to the job."

Improving Trauma Training

When medical professionals are prepared to respond quickly and appropriately to injuries in austere settings, they can improve patient outcomes. The Combat Casualty Training Consortium is one effort aimed for military medics to improve pre-hospital trauma training and some emergency room settings. The consortium is comparing training procedures that involve animals to medical simulators. A primary goal of the study is to create opportunities where it is possible to replace animals with simulation tools.

Originally developed under TATRC and AFSIM, CAE Healthcare's Caesar™ is under evaluation by the military to see if this new simulator can provide a realistic and physiologically advanced experience outside of the classroom in different types of terrain. Caesar™ is a combat trauma manikin that autonomously generates a wide range of responses detailing vital signs and even verbal cues. Wireless and self-contained, it runs up to four hours on a single battery, is powered by a remote hand-held tablet, and most importantly, allows medics to transition from the classroom to real life scenarios. Following an exercise, the instructor has the ability to review an automatic event log that captures injuries and treatments. The event log offers review of decisions, actions, and care improvement strategies while the scenario is still fresh in a student's memory.

Medical Practice and Education

Developing medical training systems and competency assessments for sustained military medical readiness is another area where simulation can assist. A leading games developer, Breakaway LTD, is creating a hospital-based chemical/biological incident response game. It employs a multiuser, online, and collaborative environment.

The training system is inspired by the hospital management of CBRNE incidents out of the Army Medical Department capstone exercise course at the U.S. Army Medical Research Institute of Chemical Defense. The game focuses on mass casualty patient care, triage, and emergency response. It is intended for military treatment facilities, and the training system will satisfy accreditation requirements.

"Most of the time, we train towards helping a single patient," Dr. Talbot said. "But how do we handle 50 or 100 casualties at once? Bombs and chemicals cause mass casualties. We need to practice teamwork against overwhelming odds because hospitals can't respond well unless they rehearse for it regularly."

The CAE Caesar™ trauma patient simulator provides physiologically advanced responses that may improve medical training. (Photo courtesy of CAE, Inc.)

Virtual Trainer

Advancing user interfaces and offering interactive technologies for healthy living, medical practice, and patient rehabilitation is an important focus area for AFSIM – and help involve families in the recovery process.

AFSIM and commercial game development technology leaders are creating engaging, valid rehabilitation exercise games that use home devices and a motion controlled interface. The first of this effort for wounded warrior physical therapy, "Vitalize!", employs Microsoft Xbox Kinect video game technology.

The approach is to engage therapists and patients in game design and validate it with clinical trials. If found effective, doctors would have a tool that remotely monitors a patient's progress via the Internet. Updating prescribed exercises also could be delivered remotely. The patient could have a virtual physical trainer in their own living room and blend rehabilitative exercise into game play shared with family and friends.

Kinect is a game console platform that has a sophisticated sensor to track full body motion. It senses depth and creates a 3D model. It also has a microphone that isolates the player's voice and cancels out background noise. With biometric facial recognition, it registers a saved player profile as soon as the person walks in front of the console. The person is the "controller," so there are no devices to hold because the technology tracks how fast or slow and where the body moves in relation to the virtual environment. It listens to commands and responds with no delay.

One example of how it has been used outside of a gaming purpose is by surgeons in the operating room. The 3D camera is connected to medical imaging equipment to better visualize the internal organs of patients. It has been used as a remote mouse to view scans during surgery instead of reaching for a physical mouse in the middle of an operation. The console tracks a surgeon's hand to create a virtual mouse pointer, allowing the surgeon to remain focused on the procedure while still accessing information.

Simulation Possibilities

With technology and future medical simulation advances, personnel could practice existing medical skills and learn new medical knowledge continuously, instead of a few times a year. Service members could have more resources available to recover from an injury. It may even offer clinicians another measure to achieve successful therapy programs. It looks possible that in a few years personnel might connect with physical therapists, life coachs, doctors, teachers, or support groups by turning on a gaming console in their home, office, or medical treatment facility.

The New Culture of Wellness - Social Networks

By: Dr. Linda Spencer, Ph.D. and Ann M. Stark, HOOAH 4 HEALTH Correspondents

The Internet has become one of the most frequently referenced sources for health information with eight in 10 Internet users having sought health information online. According to the Pew Research Center's Internet and American Life Project, the rapid change of pace and volume of information regarding health issues has set the stage for a second generation of participatory media branded Web 2.0 "new media" - a social media that emphasizes two-way communication among users.

A market has developed for consumers who require health and wellness information but whose primary physicians are not readily available. These consumers have turned to mainstream media and the Internet as well as online videos, blogs, and podcasts to reinforce health care messages that may not necessarily be available from a physician due to time constraints during office visits.

As technology continues to improve, social media applications will grow, providing consumers greater access to health promotion messages. What does this mean for the Department of Defense (DoD) and the force health protection mission? While music and film industries rapidly adapted to social media marketing strategies, the public health world is just beginning to recognize its low cost and wide reaching advantages as opposed to the high costs connected with printing and television commercials.

In February 2010, DoD announced a new policy allowing its personnel to use social networking sites such as Facebook and MySpace. The Pentagon said in a statement, "Under this new policy, there will be open and consistent access across the board." The statement added that sites with content banned by the military, such as those that offer pornography, gambling, and promote hate crimes, will still be blocked.

Facebook Director of Online Operations Don Faul, a former Marine, said in a statement, "Facebook is an efficient way for people with real-world connections to share information and communicate, and can be a particularly beneficial link between those stationed around the world and their families at home."

The Military Health System (MHS) hosts a social media hub at *www.health.mil* for Service members, families, and staff to connect to a wide variety of networking opportunities, including Facebook, podcasts, Dot Mil Docs, MHS Blog, and Twitter. The www.health.mil website also embraces social media to start dialog and reach out to Service members, families, and civilians in need of support to combat risky behaviors such as tobacco use, or to deliver public health related news in real-time.

"The Web is no longer static content," says Andrew Wilson who manages the federal pandemicflu.gov. website. You really have to get your message out to where people are going to be." Wilson pointed out the success of the public health response to the recent recall of salmonella contaminated peanut butter that was traced to a processing plant in Georgia. The Food and Drug Administration developed a database that allowed consumers to enter a product name or barcode to find out if it had been recalled. It gave so many more people the opportunity to [receive the] information." Wilson said.

The Centers for Disease Control and Prevention has recently developed the Center for Health Marketing, which is creating podcasts, blogs, interactive games, RSS feeds, and webinars.

The Mayo Clinic Center for Social Media, one of the first of its kind, claims to be the most popular medical provider channel on YouTube and boasts 80,000 "followers"on Twitter. These outlets host news and podcast blogs encouraging patients and employees to share their stories on topics ranging from Alzheimer's to The Mayo Clinic Diet.

A popular social media outreach tool featured by the DoD Centers of Excellence for Psychological Health and Traumatic Brain Injury is the Real Warriors Campaign. The campaign focuses on behavioral health and offers a virtual, safe environment where Service members and families can read about those who share similar deployment and re-entry experiences, and gives them access to confidential support resources.

What will the next generation of social networking advances bring to those seeking health and wellness information? Look forward to Web 3.0, mobile device networking, and enhanced applications to bring instantaneous, interactive access and real-time participation opportunities to users as they continue to crave health and fitness information. For example, last summer the Army announced the top five applications (apps) developed through a pilot program. Three of the five contained health and fitness-related topics: a physical training program, telehealth mood tracker, and a new Army recruit handbook featuring an Army physical fitness test and a body mass index calculator. The Department of Veterans Affairs and DoD launched a post-traumatic stress disorder coach smartphone app last April.

DoD has come a long way in offering alternative Web 2.0 options to users despite strict security concerns. The organization has rolled out its own Facebook-like social-networking site, wiki page, blog site, and website that hosts dozens of Web applications. In the future, these channels will integrate next generation social networking advances and support the DoD community in creating a culture of wellness, thus enhancing the force health protection mission.

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Radon: What You Need to Know

By: Kelly Kotch, FHP&R Staff Writer

Did you know radon is the number one cause of lung cancer among nonsmokers, and most exposed individuals receive their exposures to radon at home? Safeguard yourself and others by testing the radon levels in your home. It's the best way to combat radon exposure and, if needed, take steps to reduce the risk of exposure by performing corrective actions.

What is Radon?

Radon is a naturally occurring, radioactive gas formed by the radioactive decay of uranium. It is undetectable by human senses. The radioactive particles attach to building surfaces and airborne dust particles, and when inhaled, can attach to lung tissue. Further radioactive decay releases radiation that damages lung tissue and can lead to lung cancer.

How does radon get into your home?

Uranium is present in varying amounts in nearly all soil. Uranium generates radon gas which is typically released into the air through the soil. It can enter your home through cracks and holes in the foundation, and through pumps. Once radon is trapped inside your home, it can build up over time and expose you and your family to the toxic gas.

What are the health effects from exposure to radon?

Lung cancer is the only known health effect directly linked to radon exposure. If exposure levels are high enough over time, lung cancer could develop between five to 25 years later. There currently is no evidence that links radon to the onset of other respiratory diseases.

Radon in indoor air is estimated to cause about 21,000 lung cancer deaths each year in the United States. Smokers are at a higher risk of developing radon-induced lung cancer because of the added effect of the cancer-causing chemicals in tobacco smoke.

What is considered a dangerous level of exposure to radon?

The average indoor radon level is estimated to be about 1.3 picocuries per liter (pCi/L), and about 0.4 pCi/L of radon is normally found in the outside air. The United States Environmental Protection Agency's guideline action level for mitigating radon is 4 pCi/L.

When testing your home, if a "short term" test (detector remained in your home for two to 90 days) determines levels above 4 pCi/L, you should retest the radon levels in your home. If the results remain higher than 4 pCi/L, contact your landlord or seek professional help to mitigate the problem.

How do I test for Radon?

Radon testing can be conducted by a certified professional, or you can purchase a radon detection kit online, at your local hardware store, or through your state radon official. To learn more about radon testing, please visit http://www.epa.gov/radon/radontest.html.

Can I fix a radon problem?

Yes. There are several proven methods to reduce the amount of radon in your home. The most commonly used method uses a vent pipe system and fan to pull radon from beneath the house and vent it outside. If you have a radon problem and live in non-government housing, consult with your state radon office (or get one or more estimates from qualified radon mitigators).

Who do I contact if I live at on base housing?

Your first call should be to the Housing Office. Other sources of information are the Public Works Department, the Base Civil Engineer, or the Environmental Division/Department at your base. If you live in privatized housing, contact the privatized housing property manager's customer service or maintenance staff.

Helpful Resources

Force Health Protection and Readiness (FHP&R)
fhpr.osd.mil

Centers for Disease Control and Prevention
www.cdc.gov/flu

Defense Centers of Excellence
www.dcoe.health.mil

Department of Veterans Affairs
1-800-827-1000
www.va.gov

DeployMed ResearchLINK
fhpr.osd.mil/deploymed

Deployment Health and Family Readiness Library
deploymenthealthlibrary.fhpr.osd.mil

DoD Deployment Health Clinical Center
1-866-559-1627
www.pdhealth.mil

DoD Mental Health Self-Assessment Program
www.pdhealth.mil/mhsa.asp

FHP&R on Twitter
twitter.com/forcehealth

GulfLINK
gulflink.fhpr.osd.mil

HOOAH 4 HEALTH
www.hooah4health.com

Military Health System
health.mil

Military OneSource
www.militaryonesource.com

MILVAX
www.vaccines.mil

National Suicide Prevention Lifeline
1-800-273-TALK (8255)

Pandemic Influenza Watchboard
www.dod.mil/pandemicflu

Post-Deployment Health Reassessment
fhp.osd.mil/pdhrainfo/index.jsp

TRICARE
www.tricare.mil

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